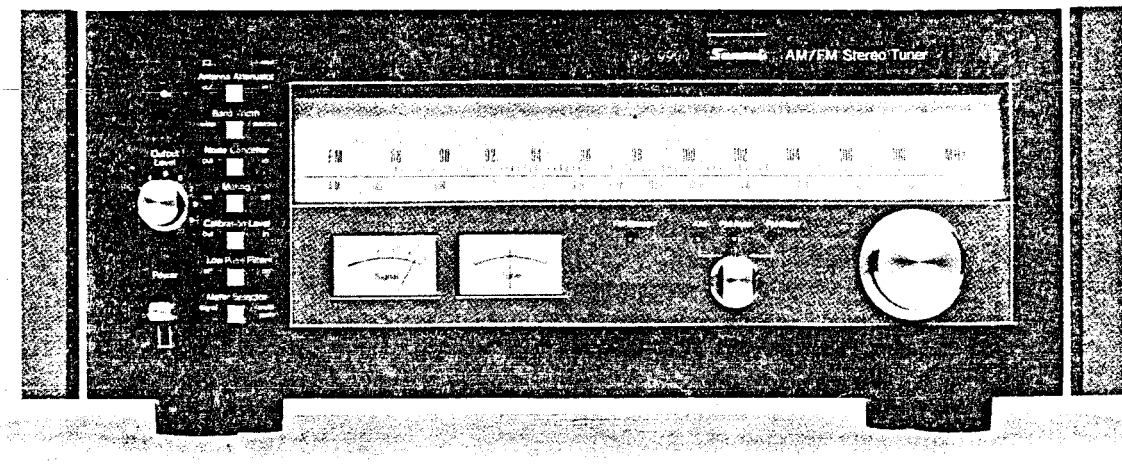
249

SERVICE MANUAL

AM/FM STEREO TUNER

SANSUI TU-9900



SANSUI ELECTRIC CO., LTD.

249

Sansui

This service manual is designed for service engineers to repair, adjust, maintain and order the replacement parts of the TU-9900 correctly.
When ordering the parts, use the stock number and parts name specifically referring to the Parts Locations & Parts Lists.
For general usage and maintenance of the unit, please refer to the Operating Instructions attached with the unit.

TABLE OF CONTENTS

Section	Title	Page
1.	SPECIFICATIONS	2
2.	BLOCK DIAGRAM	2
3.	PARTS LOCATION AND PARTS LIST	3
3-1.	PA5331P FM FRONT-END PACK	3
3-2.	F-2524 FM IF Circuit Board	4
3-3.	F-2528 Switch Circuit Board	4
3-4.	F-2525 FM Discriminator Circuit Board	5
3-5.	F-2539 AM IF Circuit Board	6
3-6.	F-2559 MPX Noise AMP. Circuit Board	6
3-7.	F-2526 FM MPX Circuit Board	7, 8
3-8.	F-2565 Indicator Circuit Board	8
3-9.	F-2552 Illumination Circuit Board	8
3-10.	F-2527 Power Supply Circuit Board	9
3-11.	Figures	9
3-12.	Other Parts (Top & Bottom Side)	10
3-13.	Other Parts (Front Side)	11
4.	ALIGNMENTS AND ADJUSTMENTS	12
4-1.	Regulated Power Supply Voltage Circuit Board Adjustment	12
4-2.	FM IF Adjustment & Tracking	12
4-3.	MPX Alignment	13
4-4.	Calibration level Adjustment	13
4-5.	AM IF Adjustment and Tracking	13, 14
5.	TROUBLESHOOTING CHART	15
5-1.	Main Troubleshooting on Each Section	15, 16
5-2.	Operation Block Diagram	16
6.	SCHEMATIC DIAGRAM	17
7.	THREADING OF DIAL CORD	18
7-1.	Threading of Dial Cord	18
7-2.	Attachment of Dial Pointer	18
8.	PACKING LIST	back cover
9.	ACCESSORY PARTS LIST	back cover

1. SPECIFICATIONS

FM SECTION

TUNING RANGE .....88 to 108 MHz
SENSITIVITY (IHF) .....1.5 μV
(DIN).....0.9 μV
QUIETING SLOPE
STEREO: WIDE .....39dB (10 μV), 53dB (50 μV)
NARROW .....40dB (10 μV), 54dB (50 μV)
MONO: WIDE .....61dB (10 μV), 73dB (50 μV)
NARROW .....61dB (10 μV), 73dB (50 μV)
TOTAL HARMONIC DISTORTION
STEREO: WIDE .....less than 0.08% (1 kHz)
less than 0.1% (50 Hz)
less than 0.15% (10 kHz)
NARROW .....less than 0.8% (1 kHz)
less than 0.8% (50 Hz)
less than 1.2% (10 kHz)
MONO: WIDE .....less than 0.06% (1 kHz)
NARROW .....less than 0.5% (1 kHz)
SIGNAL TO NOISE RATIO
.....better than 76dB (stereo)
better than 80dB (mono)
SELECTIVITY
WIDE .....better than 55dB (400 kHz)
better than 5dB (200 kHz)
NARROW .....better than 90dB (400 kHz)
better than 20dB (200 kHz)
CAPTURE RATIO
WIDE .....less than 1.0dB
NARROW .....less than 3.0dB
AM SUPPRESSION.....better than 58dB
IMAGE REJECTION .....better than 100dB (98 MHz)
IF REJECTION .....better than 110dB (98 MHz)
SPURIOUS REJECTION .....better than 110dB (98 MHz)
SPURIOUS RADIATION ....less than 34dB
STEREO SEPARATION
WIDE .....better than 50dB (1 kHz)
NARROW .....better than 30dB (1 kHz)
FREQUENCY RESPONSE ....30 to 15,000 Hz $^{+0.5}_{-0.8}$ dB
ANTENNA INPUT IMPEDANCE
.....75Ω unbalanced
300Ω balanced
ANTENNA ATTENUATOR ..30dB

AM SECTION

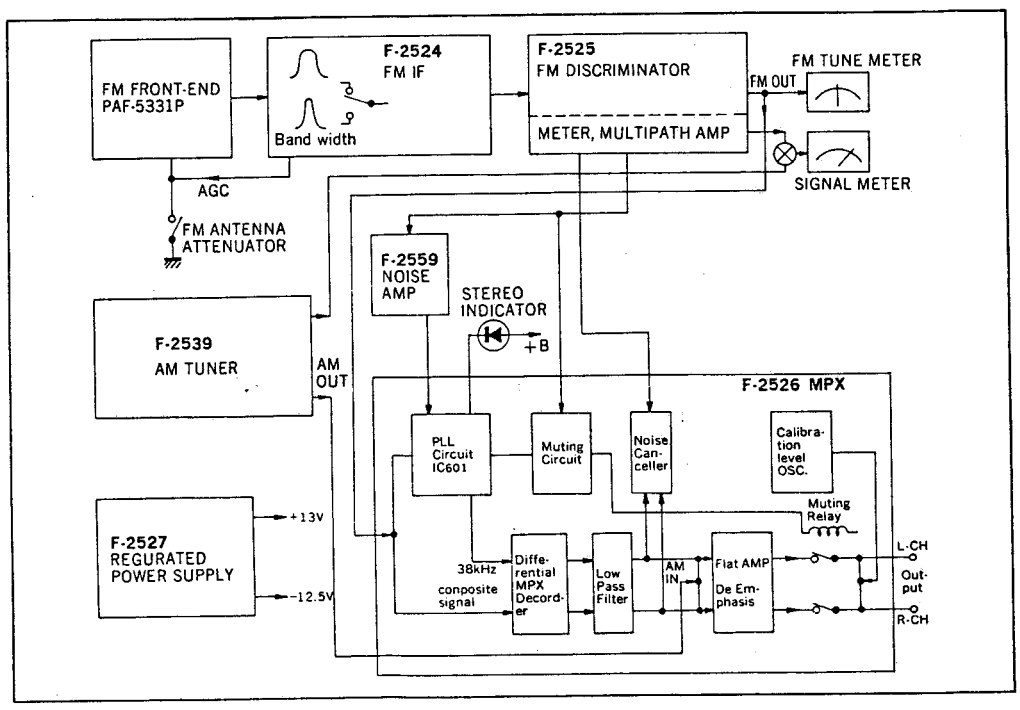
TUNING RANGE .....535 to 1,605 kHz
SENSITIVITY (Bar antenna) ..45dB/m (1,000 kHz)
SELECTIVITY .....better than 70dB (1,000 kHz)
IMAGE REJECTION .....better than 100dB/m (1,000 kHz)
IF REJECTION .....better than 100dB/m (1,000 kHz)

OTHERS

OUTPUT LEVEL
OUTPUT .....0 to 1V
DOLBY FM 0.4V
POWER REQUIREMENTS....100, 120, 220, 240V 50/60Hz
120V (Usable 110-130V), 60Hz (For U.S.A. & Canada only)
POWER CONSUMPTION....20W (rated)
DIMENSIONS .....460mm (18-1/8") W
160mm (6-5/16") H
310mm (12-1/4") D
WEIGHT .....9.6 kg (21.2 lbs) net
11.3 kg (24.9 lbs) packed

*Design and specifications subject to change without notice for improvements.

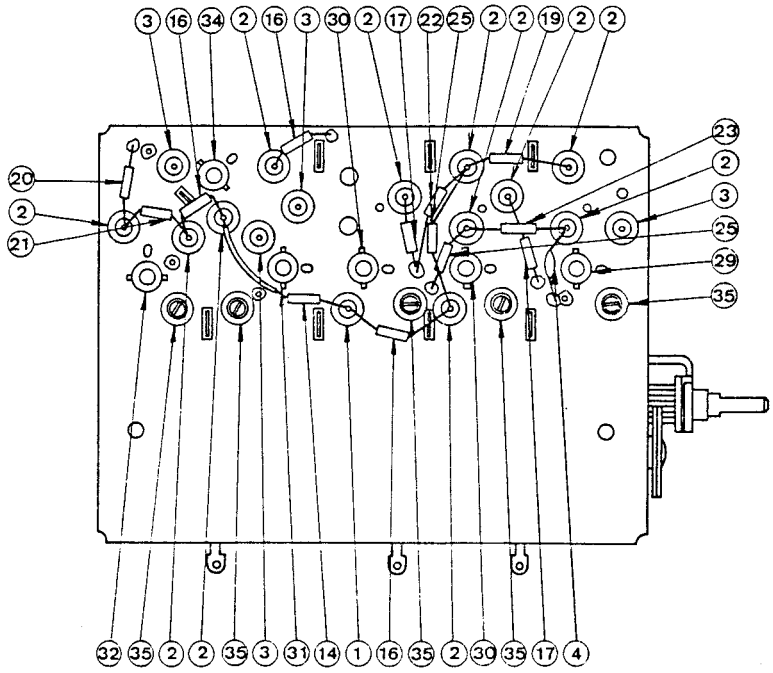
2. BLOCK DIAGRAM



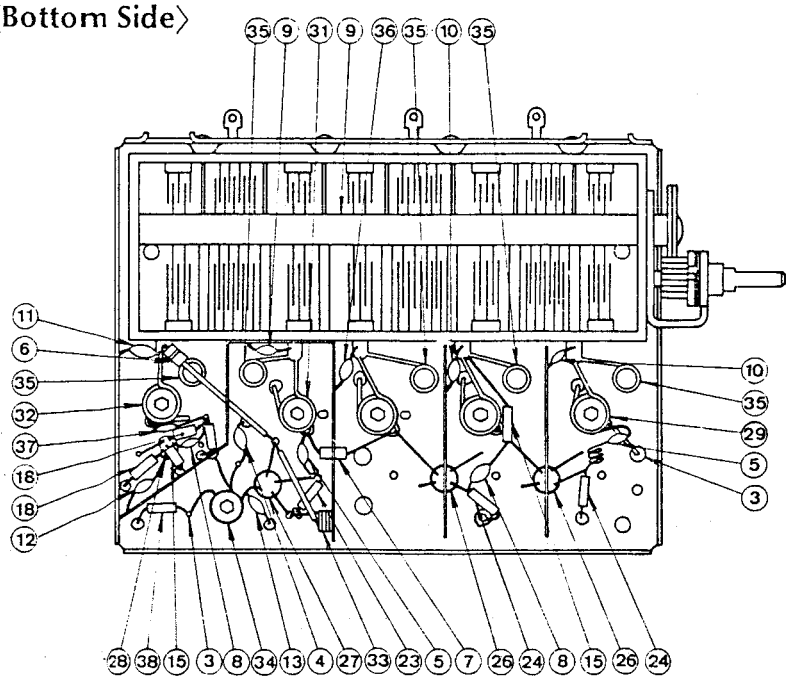
3. PARTS LOCATION AND PARTS LIST

3-1. PA5331P FM FRONT-END PACK (Stock No. 7510701)

〈Top Side〉



〈Bottom Side〉



Abbreviations

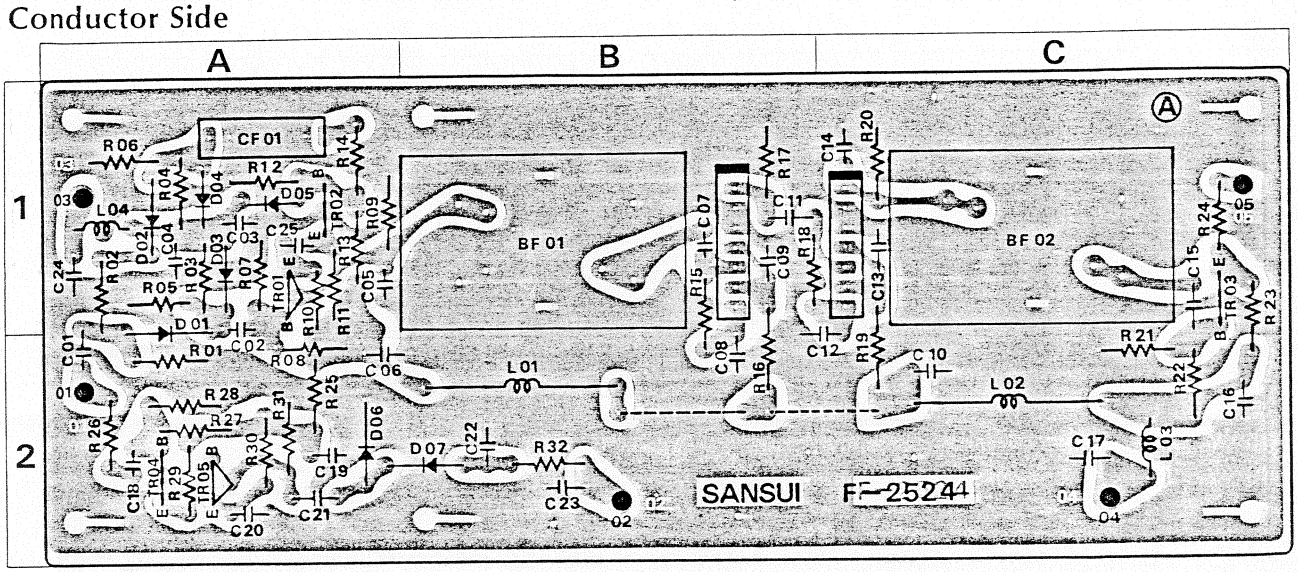
C.R.	: Carbon Resistor	BP.E.C.	: Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor		
Ce.R.	: Cement Resistor	C.C.	: Ceramic capacitor
M.R.	: Metallized Film Resistor	Mi.C.	: Mica Capacitor
		O.C.	: Oil Capacitor
M.C.	: Mylar Capacitor	P.C.	: Polystyrene Capacitor
E.C.	: Electrolytic Capacitor	T.C.	: Tantalum Capacitor

Parts List 〈Top, Bottom Side〉

Position	Parts No.	Stock No.	Description
㉘	TR01	0305802	2SC1047 C Transistor
㉖	FT01	0370131	3SK41 } FET
㉖	FT02	0370131	3SK41 } FET
㉗	FT03	0370160	3SK39 } FET
⑫	C01	0669272	12pF
⑤	C02	0657102	1000pF
②	C03	0659510	1000pF
②	C04	0659510	1000pF
②	C05	0659510	1000pF
④	C06	0657223	22000pF
①	C07	0659510	1000pF } 50V C.C.
⑧	C08	0669344	8.2pF
⑫	C09	0669272	12pF
②	C10	0659510	1000pF
②	C11	0559510	1000pF
②	C12	0659510	1000pF
①	C13	0659511	2000pF
⑦	C14	0679020	3.3pF 500V G.C.
⑨	C15	0669275	15pF
⑤	C16	0657102	1000pF
⑩	C17	0669275	15pF
②	C18	0659510	1000pF
⑬	C19	0669224	33pF
④	C20	0657223	22000pF
②	C21	0659510	1000pF } 50V C.C.
㊵	C22	0669221	22pF
㊴	C23	0669344	8.2pF
②	C24	0659510	1000pF
	C25	0659510	1000pF
㉑	C26	0669225	39pF
⑪	C27	0669280	20pF
⑥	C28	0679008	1.0pF 500V G.C.
	C29	0659510	1000pF 50V C.C.
	C30	0512100	10μF 10V E.C.
㉔	R01	0110124	120kΩ
㉓	R02	0110104	100kΩ
㉕	R04	0110105	1MΩ
⑲	R05	0110222	2.2kΩ
㉕	R06	0110105	1MΩ
㉒	R07	0110333	33kΩ
⑮	R08	0110220	22Ω
㉔	R09	0110124	120kΩ
⑯	R11	0110121	120Ω
⑭	R12	0110270	27Ω
㉓	R13	0110104	100kΩ } ¼W S.R.
⑲	R14	0110121	120Ω
㊳	R15	0110391	390Ω
⑱	R16	0110272	2.7kΩ
⑳	R17	0113472	4.7kΩ
㉑	R18	0113822	8.2kΩ
⑮	R19	0110220	22Ω
⑱	R20	0110272	2.7kΩ
㊶	R21	0110121	120Ω
	R22	0110470	47Ω
㉙	L01	4200340	Antenna Coil
㉚	L02	4210070	RF Coil
㉚	L03	4210070	RF Coil
㉛	L04	4210210	RF Coil
㉜	L05	4220170	OSC Coil
㉝	L06	4290070	Choke Coil
㉞	L07	4235740	IF Coil
㊱	VC01	1220240	AM-FM Variable Capacitor
㉟	TC01	1230080	Trimmer
㉟	TC02	1230080	Trimmer
㉟	TC03	1230080	Trimmer
㉟	TC04	1230080	Trimmer
㉟	TC05	1230080	Trimmer
		0659507	1.5pF 50V C.C.

3-2. F-2524 FM IF Circuit Board (Stock No. 7521121 Complete Circuit Board F-2524)

Conductor Side



Parts List

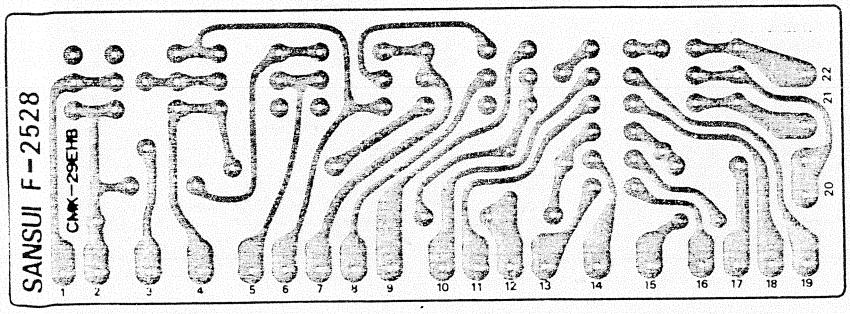
Parts No.	Stock No.	Description	Position
TR01	0306340, 1	2SC1674 (M, L)	1 A
TR02	0306340, 1	2SC1674 (M, L)	1 A
TR03	0305792	2SC930 (E)	1, 2 C
	0306340, 1	2SC1674 (M, L)	
TR04	0305792	2SC930 (E)	2 A
	0306340-2	2SC1674 (M.L.K)	
TR05	0305792	2SC930 (E)	2 A
	0306340-2	2SC1674 (M)	
IC01	0360120	PC555H	
IC02	0360120	PC555H	
D01	0310401	1N34A	1 A
D02	0310401	1N34A	1 A
D03	0311160	1S2473D	1 A
	0311180	1S1588	
D04	0311160	1S2473D	1 A
	0311180	1S1588	
D05	0311160	1S2473D	1 A
	0311180	1S1588	
D06	0310330, 1	1N60	2 A
D07	0310330, 1	1N60	2 B
C01	0657103	10000 pF	1, 2 A
C02	0657223	22000 pF	2 A
C03	0657223	22000 pF	1 A
C04	0657223	22000 pF	1 A
C05	1230050	Trimmer Capacitor	1 A
C06	0657223	22000 pF	2 A, B
C07	0657103	10000 pF	1 B
C08	0657223	22000 pF	2 B

Parts No.	Stock No.	Description	position
C09	0657223	22000 pF	1 B
C10	0657223	22000 pF	1 C
C11	0657103	10000 pF 50V C.C.	1 B
C12	0657223	22000 pF	2 B, C
C13	0657223	22000 pF	1 C
C14	1230050	Trimmer Capacitor	1 C
C15	0657103	10000 pF	1 C
C16	0657223	22000 pF	2 C
C17	0657223	22000 pF	2 C
C18	0660100	10 pF	2 A
C19	0657223	22000 pF	2 A
C20	0657223	22000 pF 50V C.C.	2 A
C21	0657103	10000 pF	2 A
C22	0657223	22000 pF	2 B
C23	0657223	22000 pF	2 B
C24	0657223	22000 pF	1 A
C25	0620471	470 pF 50V P.C.	1 A
R01	0113102	1.0kΩ	2 A
R02	0113181	180Ω	1 A
R03	0113152	1.5kΩ	1 A
R04	0113152	1.5kΩ	1 A
R05	0113103	10kΩ	1 A
R06	0113103	10kΩ	1 A
R07	0113562	5.6kΩ ¼W C.R.	1 A
R08	0113182	1.8kΩ	2 A
R09	0113102	1.0kΩ	1 A
R10	0113271	270Ω	1 A
R11	0113122	1.2kΩ	1 A
R12	0113562	5.6kΩ	1 A

Parts No.	Stock No.	Description	Position
R13	0113182	1.8kΩ	1 A
R14	0113470	47Ω	1 A
R15	0113681	680Ω	1 B
R16	0113220	22Ω	2 B
R17	0113102	1.0kΩ	1 B
R18	0113122	1.2kΩ	1 B
R19	0113220	22Ω	1, 2 C
R20	0113102	1.0kΩ	1 C
R21	0113152	1.5kΩ	2 C
R22	0113122	1.2kΩ	2 C
R23	0113222	2.2kΩ ¼W S.R.	1, 2 C
R24	0113680	68Ω	1 C
R25	0113101	100Ω	2 A
R26	0113472	4.7kΩ	2 A
R27	0113392	3.9kΩ	2 A
R28	0113152	1.5kΩ	2 A
R29	0113222	2.2kΩ	2 A
R30	0113681	680Ω	2 A
R31	0113102	1.0kΩ	2 A
R32	0113154	150kΩ	2 B
R33	0113223	22kΩ	
L01	4290011	Choke Coil	2 B
L02	4290011	Choke Coil	2 C
L03	4900200	Inductor	2 C
L04	4900200	Inductor	1 A
CF01	0910320	Ceramic Filter	1 A
BF01	4235960	IF Coil	1 B
BF02	4235960	IF Coil	1 C

3-3. F-2528 Switch Circuit Board (Stock No. 7592781 Complete Circuit Board F-2528)

Conductor Side

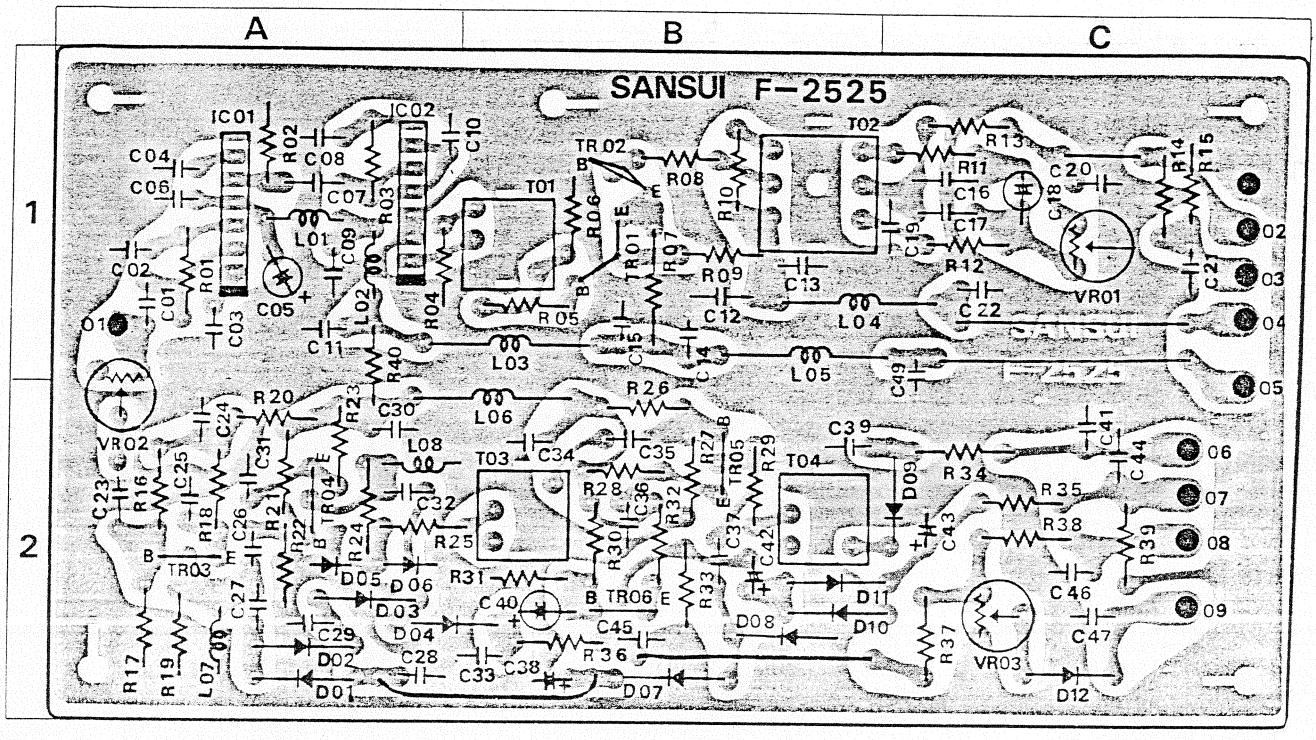


Parts List

Parts No.	Stock No.	Description
R01	0103152	1.5kΩ ½W C.R.
R02	0113101	100Ω
R03, 04	0113102	1.0kΩ
R05, 06	0113183	18kΩ ¼W S.R.
R07	0113470	47Ω
R08	0113681	680Ω
S02	1131130	Push Switch

3-4. F-2525 FM Discriminator Circuit Board (Stock No. 7521131 Complete Circuit Board F-2525)

Conductor Side



Parts List

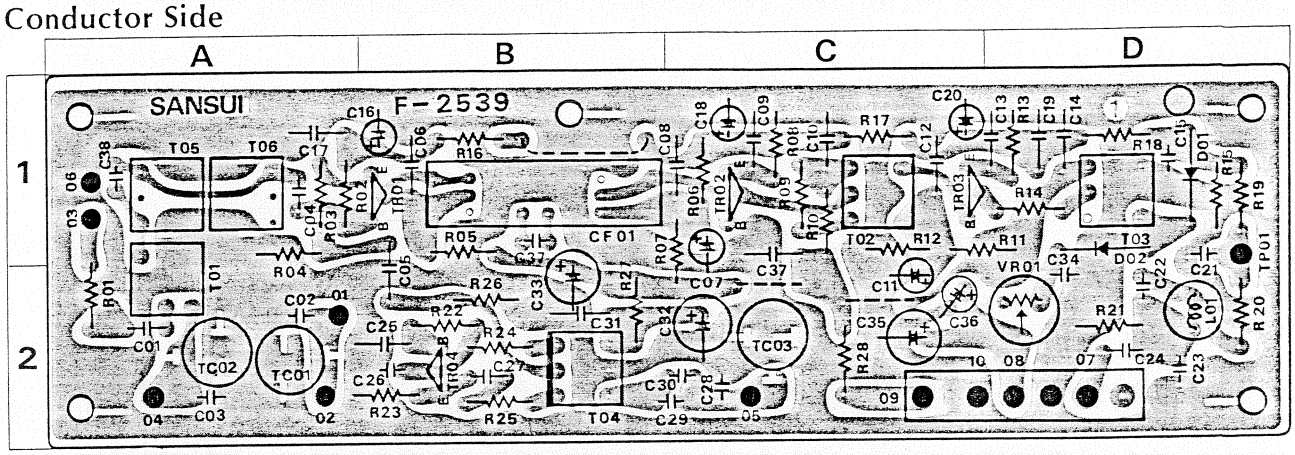
Parts No.	Stock No.	Description	Position
TR01	0306300	2SC1360	1 B
TR02	0306300	2SC1360	1 B
TR03	0306340, 1	2SC1674 (M, L)	2 A
TR04	0306340, 1	2SC1674 (M, L)	2 A
TR05	0306340, 1	2SC1674 (M, L)	Transistor 2 B
TR06	0305310	2SC458LG (B)	
	0305951~3	2SC945 (O, P, K)	2 B
	0306131~3	2SC1364 (6, 7, 8)	
IC01	0360270	μPC-577H IC	1 A
IC02	0360120	μPC-555H IC	1 A
D01	0310330, 1	1N60	2 A
D02	0310330, 1	1N60	2 A
D03	0310330, 1	1N60	2 A
D04	0310330, 1	1N60	2 A
D05	0311160	1S2473D	
	0311180	1S1588	2 A
D06	0311160	1S2473D	
	0311180	1S1588	Diode 2 A
D07	0310330, 1	1N60	2 B
D08	0310330, 1	1N60	2 B
D09	0310330, 1	1N60	2 C
D10	0310331	1N60	2 B, C
D11	0310331	1N60	2 B, C
D12	0311160	1S2473D	
	0311180	1S1588	2 C
C01	0657103	10000 pF	1 A
C02	0657223	22000 pF	1 A
C03	0657223	22000 pF 50V C.C.	1 A
C04	0657223	22000 pF	1 A
C05	0512100	10 μF 16V E.C.	1 A
C06	0657223	22000 pF	1 A
C07	0657103	10000 pF	1 A
C08	0657223	22000 pF	1 A
C09	0657223	22000 pF	1 A
C10	0657223	22000 pF	1 A
C11	0657223	22000 pF	1 A
C12	0657223	22000 pF 50V C.C.	1 B
C13	0657223	22000 pF	1 B
C14	0657223	22000 pF	1 B
C15	0657223	22000 pF	1 B
C16	0660221	220 pF	1 C
C17	0660221	220 pF	1 C

Parts No.	Stock No.	Description	Position
C18	0532100	10 μF 16V E.C.	1 C
C19	0660470	47 pF	1 C
C20	0660101	100 pF	1 C
C21	0657223	22000 pF	1 C
C22	0657223	22000 pF 50V C.C.	1 C
C23	0657103	10000 pF	2 A
C24	0657223	22000 pF	2 A
C25	0657223	22000 pF	2 A
C26	0620101	100 pF 50V P.C.	2 A
C27	0669224	33 pF	2 A
C28	0657233	22000 pF	2 A
C29	0660221	220 pF	2 A
C30	0657223	22000 pF	2 A
C31	0657223	22000 pF 50V C.C.	2 A
C32	0669224	33 pF	2 A
C33	0660221	220 pF	2 B
C34	0657223	22000 pF	2 B
C35	0620101	100 pF 50V P.C.	2 B
C36	0657223	22000 pF 50V C.C.	2 B
C37	0669264	3.3 pF	2 B
C38	0512100	10 μF 16V E.C.	2 B
C39	0657223	22000 pF 50V C.C.	2 B
C40	0515109	1 μF 50V E.C.	2 B
C41	0657223	22000 pF 50V C.C.	2 C
C42	0514339	3.3 μF 35V E.C.	2 B
C43	0514339	3.3 μF	2 B
C44	0657223	22000 pF	2 C
C45	0657223	22000 pF	2 B
C46	0657223	22000 pF 50V C.C.	2 C
C47	0657223	22000 pF	2 C
C49	0657223	22000 pF	1, 2 C
R01	0113102	1.0kΩ	1 A
R02	0113102	1.0kΩ	1 A
R03	0113102	1.0kΩ	1 A
R04	0113472	4.7kΩ ¼W S.R.	1 A
R05	0113101	100Ω	1 B
R06	0113821	820Ω	1 B
R07	0201391	390Ω 1 W C.R.	1 B
R08	0113330	33Ω	1 B
R09	0113330	33Ω	1 B
R10	0113821	820Ω ¼W S.R.	1 B
R11	0113122	1.2kΩ	1 C
R12	0113122	1.2kΩ	1 C
R13	0113101	100Ω	1 C

Parts No.	Stock No.	Description	Position
R14	0113223	22kΩ	1 C
R16	0113472	4.7kΩ	2 A
R17	0113153	15kΩ	2 A
R18	0113681	680Ω	2 A
R19	0113222	2.2kΩ	2 A
R20	0113220	22Ω	2 A
R21	0113472	4.7kΩ	2 A
R22	0113153	15kΩ	2 A
R23	0113102	1.0kΩ	2 A
R24	0113681	680Ω	2 A
R25	0113122	1.2kΩ	2 A, B
R26	0113472	4.7kΩ	2 B
R27	0113153	15kΩ ¼W S.R.	2 B
R28	0113681	680Ω	2 B
R29	0113471	470Ω	2 B
R30	0113103	10kΩ	2 B
R31	0113823	82kΩ	2 B
R32	0113471	470Ω	2 B
R33	0113332	3.3kΩ	2 B
R34	0113222	2.2kΩ	2 C
R35	0113222	2.2kΩ	2 C
R36	0113562	5.6kΩ	2 B
R37	0113222	2.2kΩ	2 C
R38	0113222	2.2kΩ	2 C
R40	0113220	22Ω	1, 2 A
L01	4900200	Inductor	1 A
L02	4900200	Inductor	1 A
L03	4290011		1 A, B
L04	4290011		1 B, C
L05	4290011	Choke Coil	1 B, C
L06	4290011		2 A, B
L07	4900200	Inductor	2 A
L08	4900200	Inductor	2 A, B
T01	4235860		1 B
T02	4235950		1 B
T03	4235940	FM IF Coil 10.7MHz	2 B
T04	4235940		2 B
VR01	1035130	10kΩ (B)	1 C
VR02	1035130	10kΩ (B) Volume	1, 2 A
VR03	1035170	10kΩ (B)	2 C
	2410590	4P Pin Ass'y Type D	

3-5. F-2539 AM IF Circuit Board (Stock No. 7530281 Complete Circuit Board F-2539)

Conductor Side



Parts List

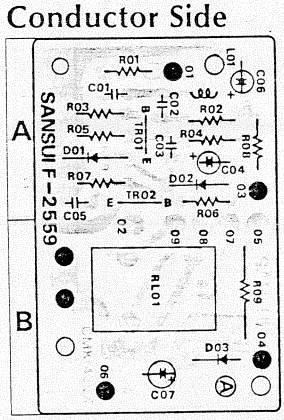
Parts No.	Stock No.	Description	Position
TR01	0306241, 2	2SC1675 (L, K)	1 B
TR02	0306241, 2	2SC1675 (L, K)	1 C
TR03	0306131, 2	2SC1364 (6, 7) } Transistor	1 C
TR04	0306241, 2	2SC1675 (L, K)	2 B
D01	0310330, 1	1N60 } Diode	1 D
D02	0310330, 1	1N60	1 D
C01	0660221	220 pF	2 A
C02	0669270	10 pF	2 A
C03	0669270	10 pF } 50V C.C.	2 A
C04	0657223	22000 pF	1 A
C05	0601477	0.047 μF 50V M.C.	1, 2 B
C06	0657473	47000 pF 50V C.C.	1 B
C07	0515109	1 μF 50V E.C.	1, 2 C
C08	0657473	47000 pF	1 C
C09	0657473	47000 pF } 50V C.C.	1 C
C10	0657473	47000 pF	1 C
C11	0515109	1 μF 50V E.C.	2 C
C12	0657473	47000 pF 50V C.C.	1 C
C13	0601827	0.082 μF 50V M.C.	1 D
C14	0657473	47000 pF 50V C.C.	1 D
C15	0601127	0.012 μF 50V M.C.	1 D
C16	0515109	1 μF 50V E.C.	1 B
C17	0657473	47000 pF 50V C.C.	1 A
C18	0513479	4.7 μF 25V E.C.	1 C
C19	0657473	47000 pF 50V C.C.	1 D
C20	0513479	4.7 μF 25V E.C.	1 C
C21	0601276	0.0027 μF } 50V M.C.	1, 2 D
C22	0601107	0.01 μF	2 D
C23	0601276	0.0027 μF	2 D

Parts No.	Stock No.	Description	Position
C24	0601227	0.022 μF 50V M.C.	2 D
C25	0657473	47000 μF } 50V C.C.	2 B
C26	0660100	10 pF	2 B
C27	0601107	0.01 μF 50V M.C.	2 B
C28	0669281	22 pF } 50V C.C.	2 C
C29	0669280	20 pF	2 B, C
C30	0620431	430 pF 50V P.C.	2 C
C31	0657473	47000 pF 50V C.C.	2 B
C32	0512470	47 μF } 16V E.C.	2 C
C33	0512100	10 μF	2 B
C34	0601476	0.0047 μF 50V M.C.	2 D
C35	0510101	100 μF } 6.3V E.C.	2 C
C36	0510101	100 μF	2 C
C37	0657473	47000 pF 50V C.C.	1, 2 C
R10	0113101	100Ω	2 A
R02	0113103	10kΩ	1 B
R03	0113220	22Ω	1 A
R04	0113102	1.0kΩ	2 A
R05	0113221	220Ω	1 B
R06	0113332	3.3kΩ	1 C
R07	0113104	100kΩ	1, 2 C
R08	0113102	1.0kΩ	1 C
R09	0113333	33kΩ } 1/4W S.R.	1 C
R10	0113221	220Ω	1 C
R11	0113393	39kΩ	1 D
R12	0113682	6.8kΩ	1 C
R13	0113151	150Ω	1 D
R14	0113331	330Ω	1 D
R15	0113103	10kΩ	1 D
R16	0113222	2.2kΩ	1 B
R17	0113222	2.2kΩ	1 C

Parts No.	Stock No.	Description	Position
R18	0113153	15kΩ	1 D
R19	0113103	10kΩ	1 D
R20	0113103	10kΩ	2 D
R21	0113103	10kΩ	2 D
R22	0113334	330kΩ	2 B
R23	0113102	1.0kΩ 1/4M S.R.	2 A, B
R24	0113561	560Ω	2 B
R25	0113100	10Ω	2 B
R26	0113101	100Ω	2 B
R27	0113332	3.3kΩ	2 B
R28	0113470	47Ω	2 C
R701	0103122	1.2kΩ 1/2W S.R.	
L01	4900220	Inductor 100M	2 D
L701	4200540	Bar Antenna 220μH	
T01	4210180	RF Coil	1, 2 A
T02	4230610	IF Coil 455kHz	1 C
T03	4230500	IF Coil 455kHz	1 D
T04	4220480	OSC Coil 115μH	2 B
CF01	0910310	Ceramic Filter 455kHz	1 B
VR01	1035170	47kΩ B Volume	2 D
TC01	1230060	} Trimmer Condencer	2 A
TC02	1230060		2 A
TC03	1230060		2 C
	2260010	Test pin	
	2410570	5P pin Ass'y type D	

3-6. F-2559 MPX Noise AMP. Circuit Board (Stock No. 7540781 Complete Circuit Board F-2559)

Conductor Side



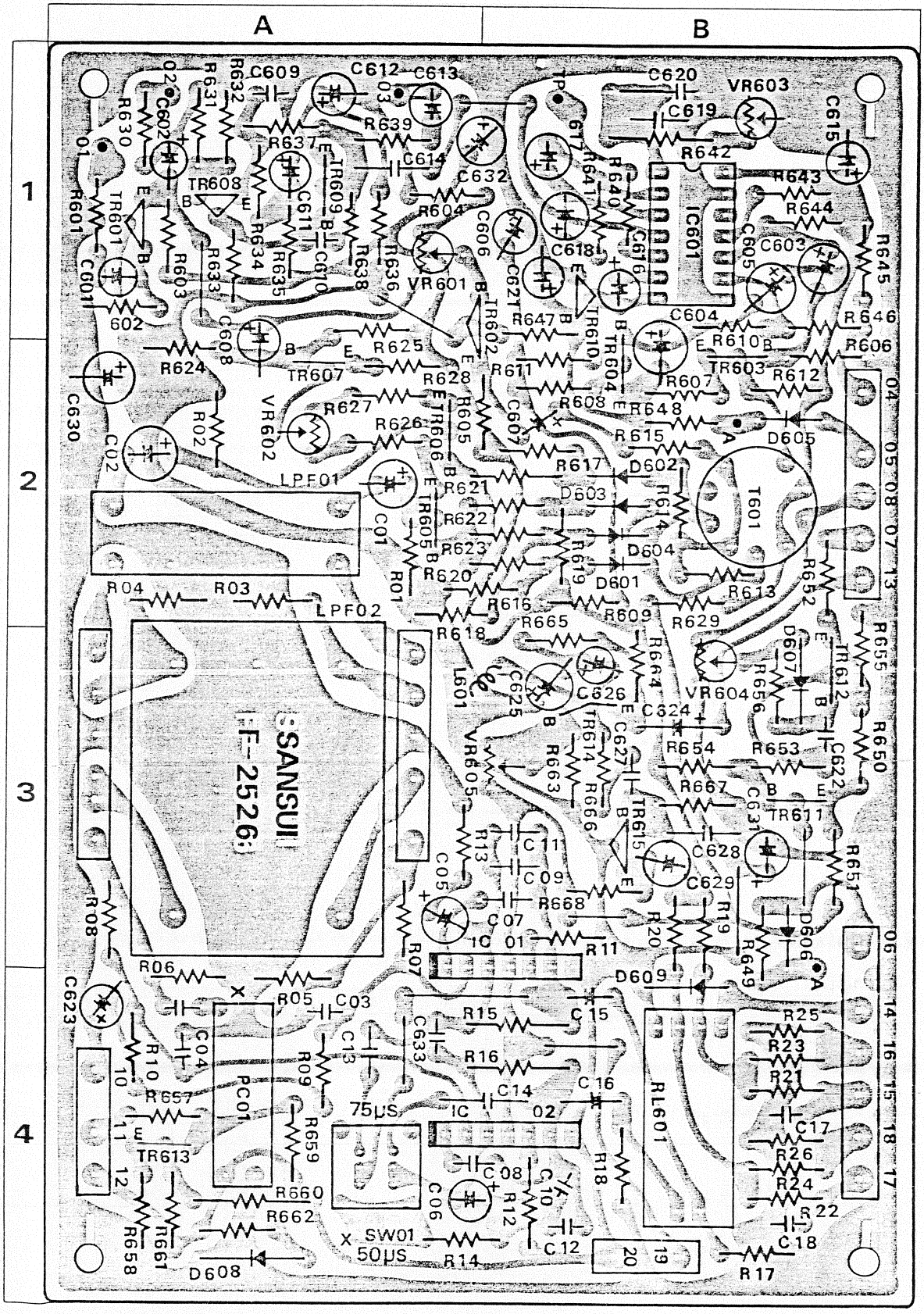
Parts List

Parts No.	Stock No.	Description	Position
TR01	0305310	2SC458LG (B)	A
	0305951-3	2SC945 (Q, P, K)	
	0306131-3	2SC1364 (6, 7, 8)	
TR02	0300510, 1	2SA733 (P, Q)	A
D01	0310400	1N34A } Diode	A
	0310810	SD46 (9)	
D02	0310400	1N34A } Diode	A
	0310810	SD46 (9)	
D03	0310880	10D 05	B
C01	0660221	222pF	A
C02	0660221	220pF } 50V C.C.	A
C03	0657102	1000pF	A
C04	0519105	2.2μF 50V E.C.	A
C05	0657102	1000pF 50V C.C.	A
C06	0515109	1μF 50V E.C.	A
C07	0511470	47μF 10V E.C.	B

Parts No.	Stock No.	Description	Position
R01	0113103	10kΩ	A
R02	0113104	100kΩ	A
R03	0113153	15kΩ	A
R04	0113222	2.2kΩ } 1/4W S.R.	A
R05	0113471	470Ω	A
R06	0113103	10kΩ	A
R07	0113273	27kΩ	A
R08	0113470	47Ω	A
R09	0103151	150Ω 1/2W C.R.	B
L01	4900090	Inductor	A
	2260010	Test Pin	
	2410570	5P Pin Ass'y Type D	

3-7. F-2526 FM MPX Circuit Board (Stock No. 7540771 Complete Circuit Board F-2526)

Conductor Side



Parts List

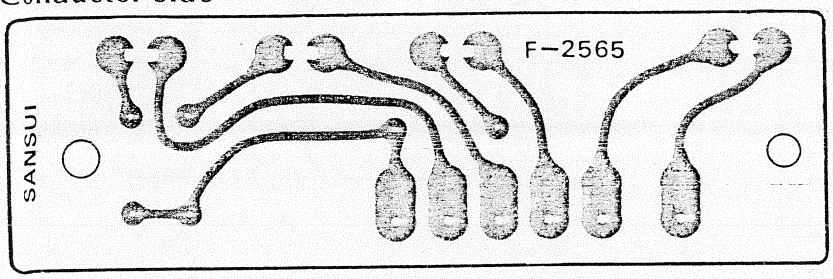
Parts No.	Stock No.	Description	Position
TR601	0306091, 2	2SC1312R (G, H)	1 A
TR602	0306091, 2	2SC1312R (G, H)	1, 2 A B
TR603	0306371, 2	2SC1175 (E, F)	2 B
TR604	0300510, 1	2SA733 (P, Q)	1, 2 B
TR605	0306091, 2	2SC1312R (G, H)	2 A
TR606	0306091, 2	2SC1312R (G, H)	2 A
TR607	0306091, 2	2SC1312R (G, H)	2 A
TR608	0305310	2SC458LG (B)	1 A
	0305951-3	2SC945 (Q, P, E)	
	0306131-3	2SC1364 (6)	
TR609	0300510, 1	2SA733 (P, Q)	1 A
TR610	0306132, 3	2SC1364 (7, 8)	1 B
TR611	0305952, 3	2SC945 (P, K)	3 B
	0306132, 3	2SC1364 (7, 8)	
TR612	0300450	2SA493 (G, R)	3 B
	0300510, 1	2SA733 (P, Q)	
TR613	0306132, 3	2SC1364 (7, 8)	4 A
TR614	0305952	2SC945 (P)	3 B
	0306132	2SC1364 (7)	
TR615	0305951, 2	2SC945 (Q, P)	3 B
	0306131, 2	2SC1364 (6, 7)	
IC01-02	0360280	TA-7136P IC	3,4AB·4A,B
IC601	0360300	HA1156W IC	
D601	0311160	1S2473D	2 B
	0311180	1S1588	
D602	0311160	1S2473D	2 B
	0311180	1S1588	
D603	0311160	1S2473D	2 B
	0311180	1S1588	
D604	0311160	1S2473D	2 B
	0311180	1S1588	
D605	0311160	1S2473D	2 B
	0311180	1S1588	
D607	0310400, 1	1N34A	3 B
D608	0310400, 1	1N34A	4 A
D609	0310880	10D 05	4 B
PC601	0920060	Photo cell Lamp	4 A
C01, 02	0519104	1.5μF 50V E.C.	2 A
C03, 04	0660221	22pF 50V C.C.	4 A
C05, 06	0511470	47μF 10V E.C.	3A·4A, B
C07, 08	0660560	56pF 50V C.C.	3B·4, AB
C09, 10	0620102	1000pF 50V P.C.	3 B·4 B
C13, 14	0620621	620pF	4 A·4A, B
C15, 16	0532100	10μF 16V E.C.	4 B
C17, 18	0601226	0.0022μF 50V M.C.	4 B
C19, 20	0660101	100pF 50V C.C.	
C601	0532100	10μF 16V E.C.	1 A
C602	0512100	10μF	1 A
C603	0515109	1μF 50V E.C.	1 B
C604	0512100	10μF	1 B
C605	0512330	33μF	1 B
C606	0512330	33μF 16V E.C.	1 B
C607	0512100	10μF	2 B
C608	0512330	33μF	1, 2 A
C609	0620681	680pF 50V P.C.	1 A
C610	0660220	22pF 50V C.C.	1 A
C611	0513479	4.7μF 25V E.C.	1 A
C612	0512100	10μF 16V E.C.	1 A
C613	0535109	1μF 50V E.C.	1 A

Parts No.	Stock No.	Description	Position
C614	0601337	0.033μF 50V M.C.	1 A
C615	0512330	33μF 16V E.C.	1 B
C616	0519109	0.22μF	1 B
C617	0519101	1μF 50V E.C.	1 B
C618	0519105	2.2μF	1 B
C619	0620471	470pF 50V P.C.	1 B
C621	0513479	4.7μF 25V E.C.	1 B
C622	0657103	10000pF 50V C.C.	3 B
C623	0512100	10μF 16V E.C.	4 A
C624	0512100	10μF	3 B
C625	0573109	1.0μF 35WV E.C.	3 B
C626	0573478	0.47μF	3 B
C627	0601477	0.047μF 50V M.C.	3 B
C628	0601396	0.0039μF	3 B
C629	0532100	10μF 16V E.C.	3 B
C630	0512100	10μF	2 A
C631	0512100	10μF	3 B
C632	0512221	220μF	1 A, B
C634	0601227	0.022μF 50V M.C	
C635	0512100	10μF 16V E.C.	
C919, 920	0600396	0.0039μF 50V M.C.	
R01, 02	0113472	4.7kΩ	2 A
R03, 04	0113103	10kΩ	2 A
R05, 06	0113472	4.7kΩ	4 A
R07, 08	0113223	22kΩ	3 A
R09, 10	0113473	47kΩ	4 A
R11, 12	0113223	22kΩ	3 B·4 B
R13, 14	0113272	2.7kΩ	3A·4A,B
R15, 16	0113473	47kΩ	4 A, B
R17, 18	0113104	100kΩ	4 B
R19, 20	0113333	33kΩ	3 B
R21, 22	0113331	330Ω	4 B
R23, 24	0113223	22kΩ	4 B
R25, 26	0113103	10kΩ	4 B
R601	0113102	1.0kΩ ¼W S.R.	1 A
R602	0113104	100kΩ	1 A
R603	0113332	3.3kΩ	1 A
R604	0113103	10kΩ	1 A, B
R605	0113392	3.9kΩ	2 B
R606	0113472	4.7kΩ	2 B
R607	0113330	33Ω	2 B
R608	0113331	330Ω	2 B
R609	0113470	47Ω	2 B
R610	0113153	15kΩ	1 B
R611	0113223	22kΩ	2 B
R612	0113471	470Ω	2 B
R613	0113122	1.2kΩ	2 B
R614	0113122	1.2kΩ	2 B
R615	0113680	68Ω	2 B
R616	0231104	100kΩ	2 A, B
R617	0231104	100kΩ	2 B
R618	0231104	100kΩ	2 A, B
R619	0231104	100kΩ ½W M.R.	2 B
R620	0231103	10kΩ	2 A, B
R621	0231103	10kΩ	2 A, B
R622	0231103	10kΩ	2 A, B
R623	0231103	10kΩ	2 A, B
R624	0113154	150kΩ	2 A
R625	0113563	56kΩ ¼W S.R.	1 A
R626	0113561	560Ω	2 A
R627	0113561	560Ω	2 A

Parts No.	Stock No.	Description	Position
R628	0113152	1.5kΩ	2 A
R629	0113470	47Ω	2 B
R630	0113102	1.0kΩ	1 A
R631	0113103	10kΩ	1 A
R632	0113104	100kΩ	1 A
R633	0113103	10kΩ	1 A
R634	0113272	2.7kΩ	1 A
R635	0113563	56kΩ	1 A
R636	0113391	390Ω	1 A
R637	0113223	22kΩ	1 A
R638	0113332	3.3kΩ	1 A
R639	0113102	1.0kΩ	1 A
R640	0113473	47kΩ	1 B
R641	0113102	1.0kΩ	1 B
R642	0107153	15kΩ	1 B
R643	0113392	3.9kΩ	1 B
R644	0113222	2.2kΩ ¼W S.R.	1 B
R645	0113271	270Ω	1 B
R646	0113152	1.5kΩ	1 B
R647	0113563	56kΩ	1 B
R648	0113472	4.7kΩ	2 B
R649	0113223	22kΩ	3, 4 B
R650	0113332	3.3kΩ	3 B
R651	0113331	330Ω	3 B
R652	0113152	1.5kΩ	2 B
R653	0113333	33kΩ	3 B
R654	0113473	47kΩ	3 B
R655	0113151	150Ω	2, 3 B
R656	0113473	47kΩ	3 B
R657	0113223	22kΩ	4 A
R658	0113390	39Ω	4 A
R659	0113224	220kΩ	2 A
R660	0103561	560Ω ½W C.R.	4 A
R661	0113561	560Ω	4 A
R662	0113561	560Ω	4 A
R663	0113563	56kΩ	3 B
R664	0113222	2.2kΩ ¼W S.R.	3 B
R665	0113121	120Ω	3 B
R666	0113223	22kΩ	3 B
R667	0113104	100kΩ	3 B
R668	0113472	4.7kΩ	3 B
L601	4900220	Inductor	3 A, B
T601	4240730	47MH MPX Coil	2 B
LF01	0910300	Ceramic Filter BL-14	
LF02	0910290	Ceramic Filter BL-5	
RL601	1150320	Relay Switch	4 B
VR601	1035150	22kΩ B	1 A
VR602	1035030	220Ω B	2 A
VR603	1034270	10kΩ Volume	1 B
VR604	1035170	47kΩ B	3 B
VR605	1035170	47kΩ B	3 B
S01	1110270	Slide Switch	
	2260010	Test Pin	
	2410570	5P Pin Ass'y Type D	
	2410580	3P Pin Ass'y Type D	
	2410600	6P Pin Ass'y Type D	
	2410650	2P Pin Ass'y Type D	

3-8. F-2565 Indicator Circuit Board (Stock No. 7592801 Complete Circuit Board F-2565)

Conductor Side



Parts List

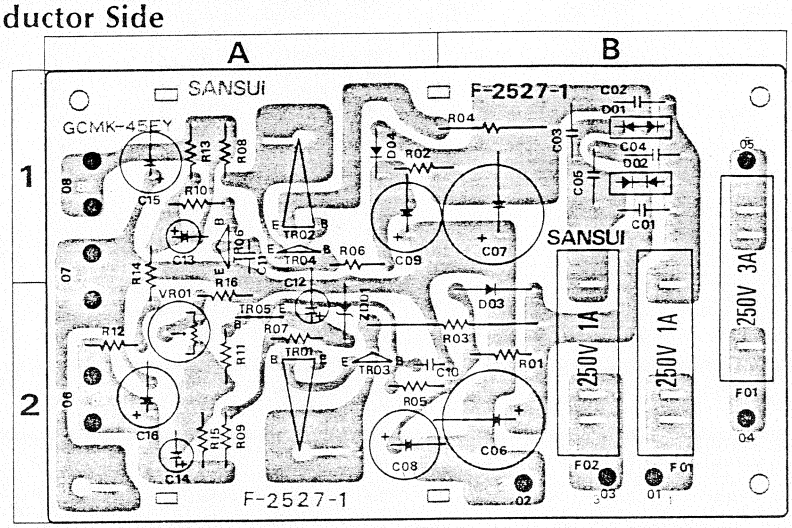
Parts No.	Stock No.	Description
LD01	0319060	SG2-12C
LD02, 03	0319050	SG2-13C Light Emitted Diode
LD04	0319060	SG2-12C
R01	0113152	1.5kΩ
R02	0113102	1.0kΩ ¼W S.R.
R03	0113102	1.0kΩ

3-9. F-2552 Illumination Circuit Board (Stock No. 7592791 Complete Circuit Board F-2552)

*This F-2552 is only a printed circuit board without any component parts.

3-10. F-2527 Power Supply Circuit Board (Stock No. 7501161 Complete Circuit Board F-2508)

Conductor Side



Parts List

Parts No.	Stock No.	Description		Position
TR01	0308411-3	2SD314 (D, E, F)	Transistor	2 A
TR02	0308411-3	2SD314 (D, E, F)		1 A
TR03	0305951, 2	2SC945 (Q, P)		2 A
	0306131, 2	2SC1364 (6, 7)		
TR04	0300220, 1	2SA562 (O, Y)		1 A
	0300510, 1	2SA733 (P, Q)		
TR05	0305310	2SC458 (LG)(B)		2 A
	0306091, 2	2SC1312R (G,H)		

Parts No.	Stock No.	Description		Positino
TR06	0300410, 1	2SA726R (F, G)	Transistor	1 A
	0300450	2SA493 (GR)		
D01	0310530	1S1850	Diode	1 B
	0311420	C08P-2-N		
D02	0310540	1S1850R		1 B
	0311430	C08P-2-R		
D03, 04	0310880	10D 05		2 B, 1 A

Parts No.	Stock No.	Description		Position
ZD01	0315530	RD-6A	Zener Diode	2 A
	0316390	RD6.2E (B)		
C01	0657473	47000pF 50V C.C.		1 B
C06	0514471	470μF	35V E.C.	2 A, B
C07	0514471	470μF		1 B
C08	0513221	220μF	25V E.C.	2 A, B
C09	0513221	220μF		1 A
C10	0657103	10000pF	50V C.C.	2 A, B
C11	0657103	10000pF		1 A
C12	0511470	47μF 10V E.C.		1, 2 A
C13	0512100	10μF	16V E.C.	1 A
C14	0512100	10μF		2 A
C15	0512330	33μF		1 A
C16	0512221	220μF		2 A
R01	0113822	8.2kΩ	1/4W S.R.	2 B
R02	0113822	8.2kΩ		1 A, B
R03	0104100	10Ω	1 W C.R.	2 A, B
R04	0104479	4.7Ω		1 B
R05	0113822	8.2kΩ	1/4W S.R.	2 A, B
R06	0113822	8.2kΩ		1 A
R07	0113222	2.2kΩ		2 A
R08	0113229	2.2Ω		1 A
R09	0113229	2.2Ω		2 A
R10	0113471	470Ω		1 A
R11	0113471	470Ω		2 A
R12	0113123	12kΩ		2 A
R13	0113123	12kΩ		1 A
R14	0113152	1.5kΩ		1, 2 A
R15	0113562	5.6kΩ		2 A
R16	0113472	4.7kΩ		2 A
VR01	1035110	4.7kΩ (B)		2 A
F01, 02	0431222	AC Fuse 1A 250V		1, 2 B
F03	0431260	AC Fuse 3A 250V		1, 2 B
	2310050	P Type Fuse Holder		
	2410650	2P Pin Ass'y Type D		

3-11. Figures

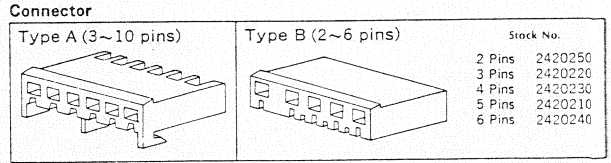
Semiconductor

SEMICONDUCTORS	COMPLETE CIRCUIT BOARD	SEMICONDUCTORS	COMPLETE CIRCUIT BOARD
2SA233 2SC945 2SC1047 2SC1360 2SC1364 2SC1674 2SC1675	F-2556 F-2557 F-2559 FM Pack F-2525 F-2524	2SA493 2SA562	F-2527 F-2526
2SA726 2SC1312	F-2527 F-2526	2SC458	F-2559
2SC930	F-2524	TA-7136P	F-2556
3SK39 3SK41	FM Pack	μPC555H PPC577H	F-2525
2SD314	F-2527	HA-1156W	F-2526

SEMICONDUCTORS	COMPLETE CIRCUIT BOARD
IN34A IN60	F-2524 F-2525 F-2526 F-2529
10D05	F-2526 F-2527 F-2559
SD46	F-2559
1S1588 1S2473D	F-2524 F-2525 F-2526
RD6A RD6EB	F-2527
1S1850 1S1850R	F-2527

Connector & Pin Ass'y

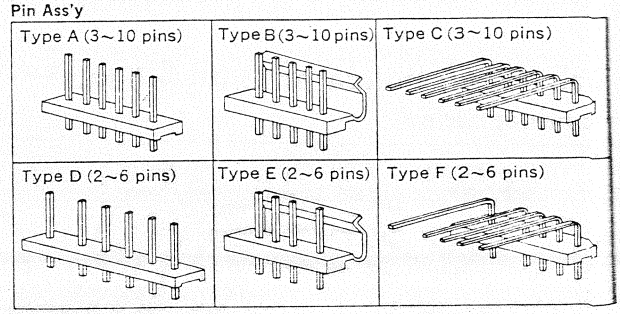
Connector



Stock No.	
2 Pins	2420250
3 Pins	2420220
4 Pins	2420230
5 Pins	2420210
6 Pins	2420240

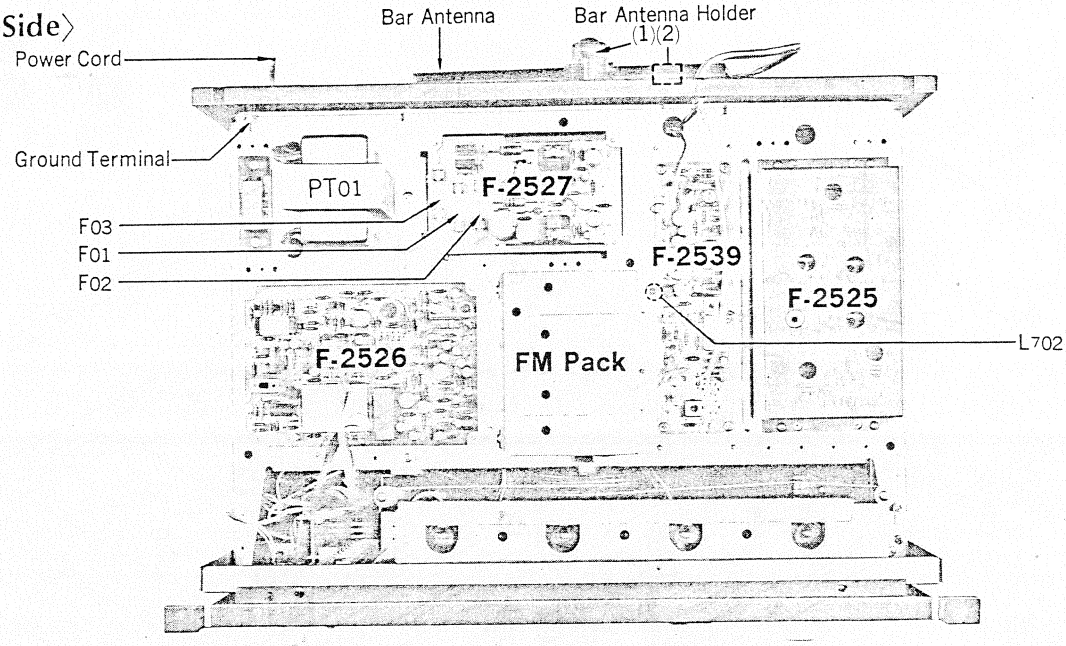
NOTE: Since stock number of famale connectors (type B) with wires are not shown in each parts list of Complete circuit board, please refer to the above parts list when ordering the connector.

Pin Ass'y

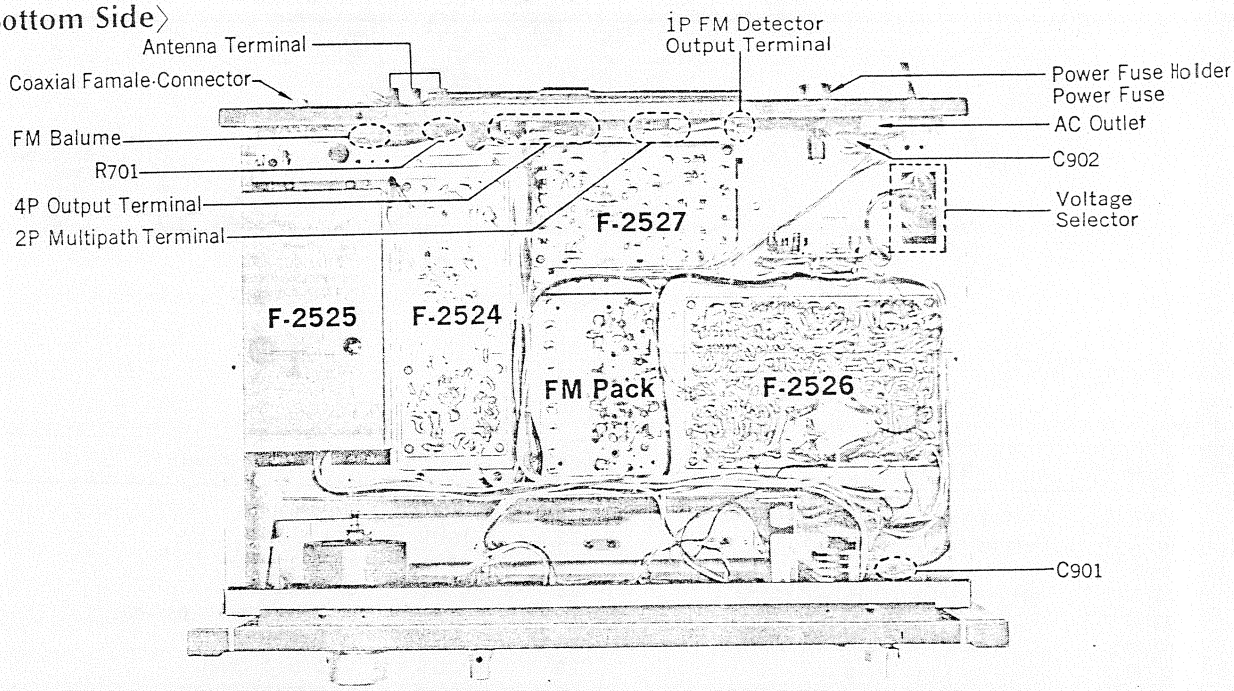


3-12. Other Parts (Top & Bottom Side)

〈Top Side〉



〈Bottom Side〉

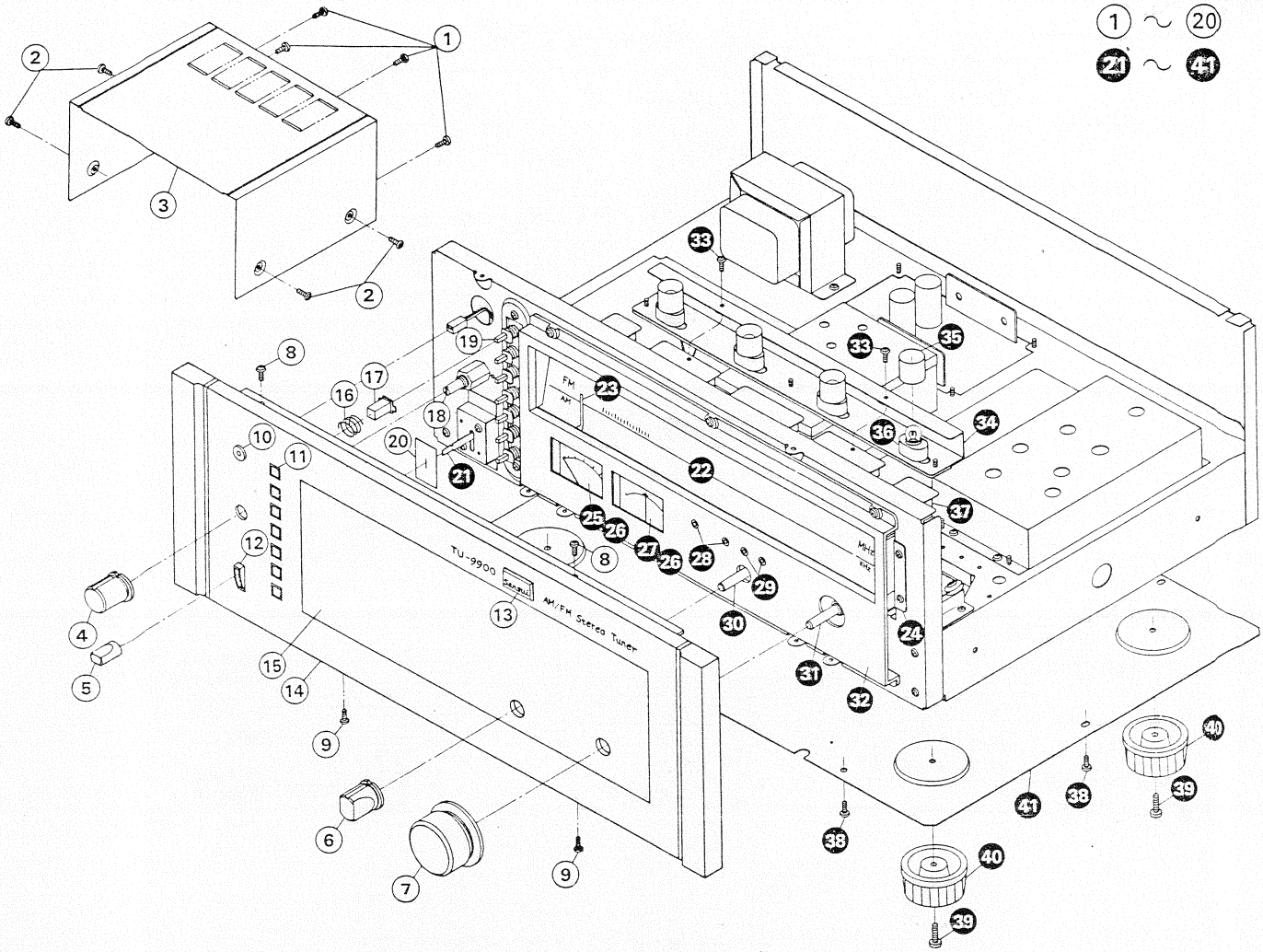


Parts List

Parts No.	Stock No.	Description
CO701	2450060	AC Outlet
L702	4290011	Choke Coil
C901	0659801	0.01μF C.C.
C902	0659802	0.047μF C.C.
R701		1.2kΩ C.R.
	2230051	Ground Terminal
	3800260	Power Cord
	4200540	Bar Antenna
	5286450	Bar Antenna Holder (1)
	5286480	Bar Antenna Holder (2)
PT01	4002300	Power Transformer

Parts No.	Stock No.	Description
	2410081	Voltage Selector Plug
	2410091	Voltage Selector Socket
F01	0431222	1A 250V AC Fuse
F02	0431222	1A 250V AC Fuse
F03	0431260	3A 250V AC Fuse
	2440020	Coaxial Famale Connector F-P-3C
	4290021	75Ω: 300Ω FM Balum
	2210190	Antenna Terminal
	2200310	4P Output Terminal
	2200300	2P Multipath Terminal
	2200290	1P Detector Out Terminal
	2300060	Fuse Holder, Power
F601	0431210	Powe Fuse 0.5A 250V

3-13. Other Parts (Front Side)



Parts List

Parts No.	Stock No.	Description
1	5109222	Binding Head Tapping Screw M3×8
2	5101161	Binding Head Screw, M4×6
3	5006490	Bonnet
4	5318251	B-6 Type Knob, Output level volume
5	5326510	E-2 Type Knob, Power Switch
6	5318260	C-6 Type Knob, Selector Switch
7	5318350	O-6 Type Knob, Tuning
8	5109122	Binding Head Tapping Screw, M3×8
9	5109222	Binding Head Tapping Screw, M3×8
10	7726~~10~~ 140	Stereo Indicator Ass'y
11	5286720	Knob Guide
12	5286730	Lever Guide
13	5336580	Sansui Mark
14	7007130	Front Panel Ass'y
15	5047850	Smoked Plate
16	6906480	Spring
17	5326530	Push Knob
18	1011080, 1	Output Level Volume, 10kΩ BYZ
19	1131130	Push Knob
20	5047460	Masking, Lever Switch
21	1170330	Lever Switch, Power

Parts No.	Stock No.	Description
22	5407910	Dial Scale
23	5416410	Dial Pointer
24	5026290	Illumination Box
25	4300900	Signal Meter
26	7726040	Meter Lamp Unit (PL05~08)
27	4300890	Tune Meter
28	0319060	L.E.D 01, 04 (Red)
29	0319050	L.E.D 02, 03 (Green)
30	1101690, 1	Selector Switch, F-1-4-3
31	7036460	Tuning Unit
32	5304140	Dial Scale Holder
33	5109122	Binding Head Tapping Screw, M3×8
34	5226140	Lamp Holder
35	5037520	Blue Filter
36	7726130	Lamp Ass'y, 8V 0.3A (PL01~04)
37	5047830	Illumination Plate
38	5109222	Binding Head Tapping Screw, M3×8
39	5101063	Binding Head Screw, M4×10
40	5517050	Leg
41	5058500	Bottom Plate

FM Pack (Bottom Side)

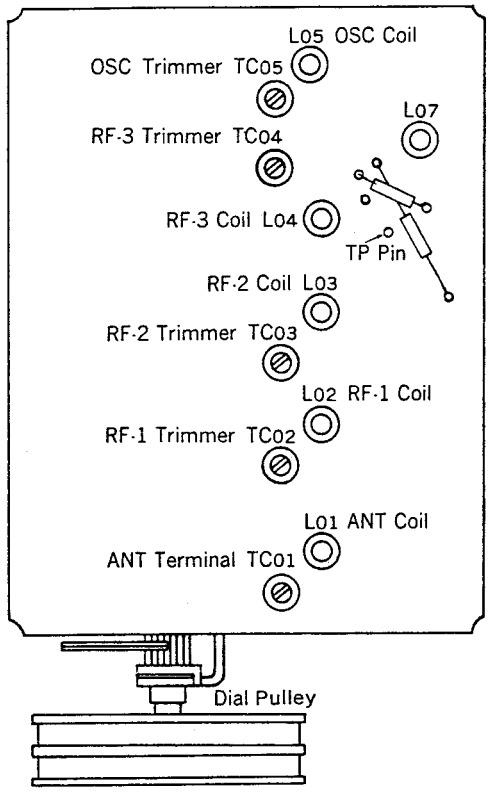


Fig. 4-4

F-2526 MPX Circuit Board

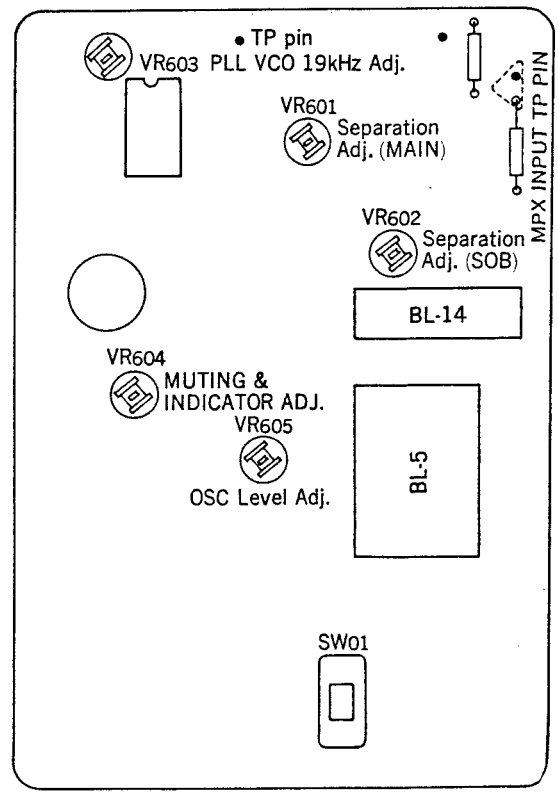


Fig. 4-5

F-2525 FM Discriminator Circuit Board

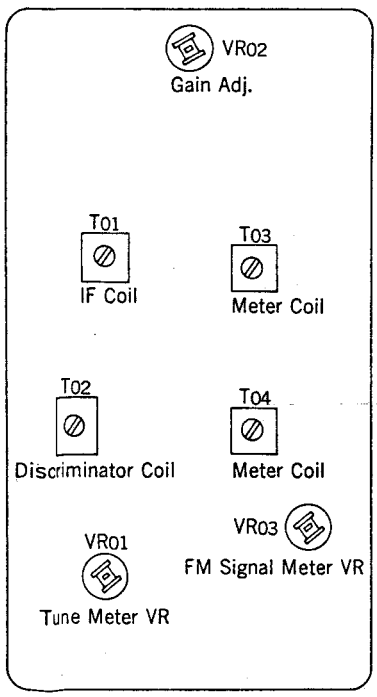


Fig. 4-6

F-2539 AM IF Circuit Board

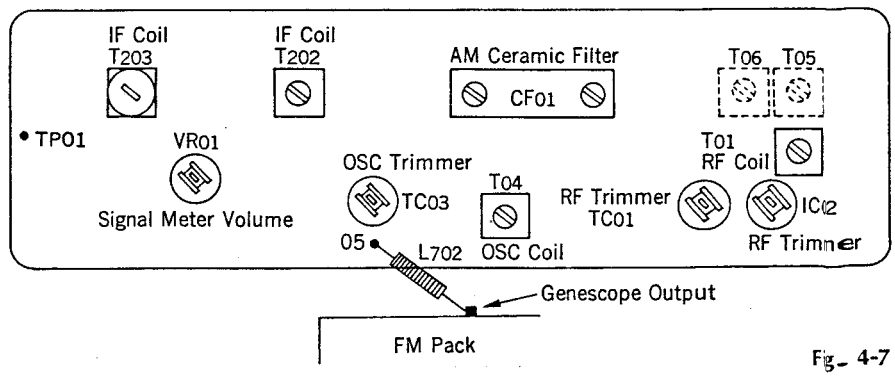


Fig. 4-7

5. TROUBLESHOOTING CHART

*The functional operation of each section is shown in the block diagram on page 16.
Please utilize the diagram together with "Main Troubleshooting on Each Section" in this manual, if necessary.

5-1. Main Troubleshooting on Each Section

Symptom — **Cause**

1. FM and AM inoperative

1-1. No any voltage supplied to each section
- 1. Defective power switch, S9 and voltage selector
- 2. Power Fuse, F901 opens
- 3. Power Fuse, F01, F02 on F-2527 open
- 4. Defective each transistor on F-2527
- 5. Unproper setting of regulated voltage

1-2. Relay inoperative on MPX output section
- 6. Defective relay, RL601
- 7. Defective Power Switch, S9b. (No voltage supplied to relay)
- 8. Defective calibration switch, S6
- 9. Muting circuit inoperative

1-3. Defective IC01, IC02 on MPX circuit board

2. Troubles on FM section

2-1. FM Inoperative

1) Signal meter inoperative (Meter circuit operative)
- 1. Defective FM pack PAF-5331P
- 2. FM Pack, PAF-5331P out of adjustment
- 3. Defective TR01~TR03 on F-2524
- 4. Defective CF01, BF01, BF02 on F-2524
- 5. Defective IC01, IC02 on F-2524
- 6. Defective band width switch, S3

2) Signal meter operative (No output signal at DETECTOR OUTPUT)
- 7. Defective IC01, IC02 on F-2525
- 8. Defective TR01, TR02 on F-2525
- 9. T201, T202 out of adjustment or open
- 10. Defective TR01 on F-2526

2-2. Troubles on Meter Section

1) Signal meter inoperative
- 11. Defective TR03, TR04 on F-2525
- 12. Defective D02~D04 on F-2525
- 13. Meter volume, VR03 out of adjustment
- 14. Defective Signal Meter
- 15. Defective meter selector switch, S8

2) No input signal to muting, indicator circuit
- 16. T203, T204 open on F-2525
- 17. Defective TR05 on F-2525

3) Multi-path meter inoperative (When meter selector switch is pushed) ON (MULTI-PATH)
- 18. Defective TR06 on F-2525
- 19. Defective D10, D11 on F-2525
- 20. Defective meter selector switch, S8

2-3. Troubles on AGC Circuit Section
- 21. Defective TR04, TR05 on F-2524
- 22. Defective D06, D07 on F-2524

4. ALIGNMENTS AND ADJUSTMENTS

Abbreviations

Eqnipment

AM FM Generator Oscilloscope .....Genescope
AM Standard Signal Generator .....AM SSG
FM Standard Signal Generator .....FM SSG
FM Stereo Generator.....Stereo SG
Oscilloscope .....Scope
Audio Oscillator .....Audio Osc.
Distortion Meter .....Dist. Meter.

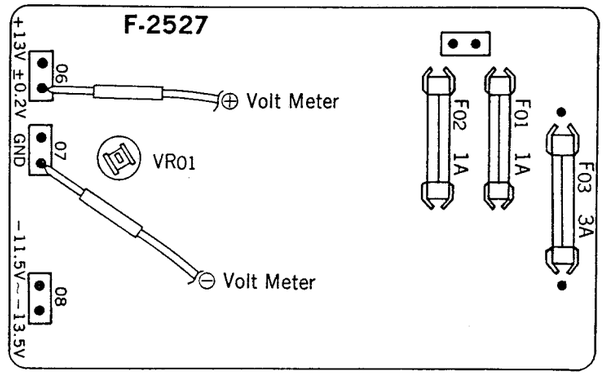
Others

Clockwise.....CW.
Counterclockwise .....CCW.
Antenna.....ANT.
Modulation .....MOD.

4-1. Regulated Power Supply Voltage Circuit Board Adjustment

STEP	SUBJECT	EQUIPMENT	MEASURE OUTPUT	ADJUST	ADJUST FOR
1.	Voltage Adj.	DC Volt Meter	06, 07 Terminal of F-2527	VR01 F-2527	+13V ±0.2V

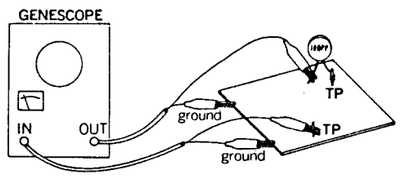
Fig. 4-1

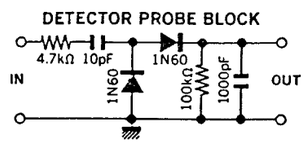


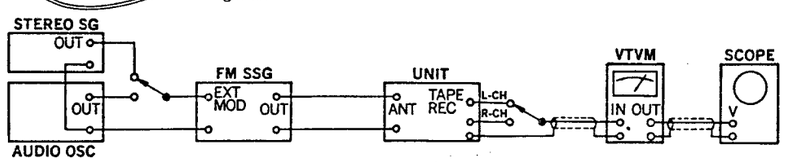
4-2. FM IF Adjustment & Tracking

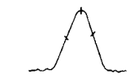
(See Fig. 4-2, 4-3 on page 13 & Fig. 4-4, 4-5, 4-6 on page 14)

Note:
1. Selector .....FM AUTO
2. Output level of genescope ....After attenuator
3. Sweepwidth .....1.5~2cm/150kHz
4. Frequency band .....9.5~11.5MHz
5. Connection .....Connect the output of genescope to TP. 1 through 100pF ceramic capacitor.
6. FM MUTING switch .....OFF.





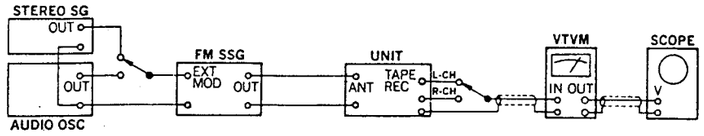


STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1.	IF Coil Band Width Switch ....wide	Output 90dB Genescope	TP Pin of FM Pack	Terminal 05 of F-2524 Use Detector probe		Unnecessory	Confirm this IF wave
	Band width Switch ..Narrow	Output 90dB Genescope	Same as above	Same as above		Same as above	Same as above 
2.	Meter Coil	Output 70dB Genescope	Same as above	Terminal ⓙ of F-2559 (In this case, make short between terminal 01 of F-2559 and chassis	T03 T04 F-2525	Max. Output	
3.	Discriminator Coil	Output 70dB Genescope	Same as above	Terminal 01 of F-2526	T02 F-2525	Max. linearity of S Curve	
4.	90MHz Dial Calibration	90MHz ANT Input 60dB 400Hz (100% MOD) FM SSG	ANT Terminal 300Ω	REC OUT L or R-CH VTVM & Scope	L05 FM Pack	Max. Output	
	106MHz Dial Calibration	106MHz ANT Input 60dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	TC05 FM Pack	Same as above	
5.	90MHz RF Adj.	90MHz ANT Input 60dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	L01, L02 L03, L04 FM Pack	Same as above	
	106MHz RF Adj.	106MHz ANT Input 60dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	TC01, TC02 TC03, TC04 FM Pack	Same as above	
6.	Signal Meter Adj.	98MHz ANT Input 60dB 400Hz (100% MOD) FM SSG	Same as above	Signal Meter	VR03 F-2525	4.3 on meter	
7.	Gain Adj.	98MHz ANT Input 40dB FM SSG Pilot 19kHz (10% MOD) L-CH (0% MOD) R-CH 1kHz (45% MOD) STEREO SG	Same as above	VTVM & Scope	VR02 F-2525	Separation (Noise Canceller SW → ON)	Proceed step 6 again to confirm the meter Pointer level, 4.3 If not, repeat from step 6.

Note: 1) Any IF adjustment is unnecessary. Confirm correct IF waveform only.
2) As two trimmers on F-2524 are pre-adjusted in factory, this adjustment is unnecessary.
3) When measuring FM distortion, the following measuring instruments are required.
FM SSG having distortion less than 0.05%
FM Stereo having distortion less than 0.015%

4-3. MPX Alignment (See Fig. 4-5 on page 6)

Note: 1. Selector.....FM Auto
2. FM Muting switch .....OFF



STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1.	PLL VCO Adj.	98MHz ANT Input 60dB FM SSG Pilot 19kHz (10% MOD) L-CH 1kHz (45% MOD) R-CH (0% MOD) STEREO SG	ANT Terminal 300Ω	Stereo Indicator	VR603 F-2526	Light Indicator	Adjust the VR603 within center of lighting level
	PLL VCO Adj. In case of using Freq. Counter		Make short between MPX input terminal 01 of F-2556 and chassis	TP pin F-2526 Use Freq. Counter	VR603 F-2526	19kHz ±30Hz	
2.	Separation	98MHz ANT Input 60dB FM SSG Pilot 19kHz (10% MOD) L-CH (0% MOD) R-CH 1kHz (45% MOD) STEREO SG	ANT Terminal 300Ω	VTVM & Scope	VR601 F-2526	Min. Output −45dB	
3.	Separation	98MHz ANT Input 60dB FM SSG Pilot 19kHz (10% MOD) R-CH (0% MOD) L-CH 1kHz (45% MOD) STEREO SG	Same as above	REC OUT R-CH VTVM & Scope	VR602 F-2526	Min. Output −45dB	Confirm step 2. If less than −45dB repeat step 2, 3
4.	Muting level & Indicator level	98MHz ANT Input 12dB FM SSG Pilot 19kHz (10% MOD) L-CH (0% MOD) R-CH (45% MOD)	Same as above	Stereo Indicator	VR604 F-2526	Muting level 12dB Indicator lighting level 12dB	

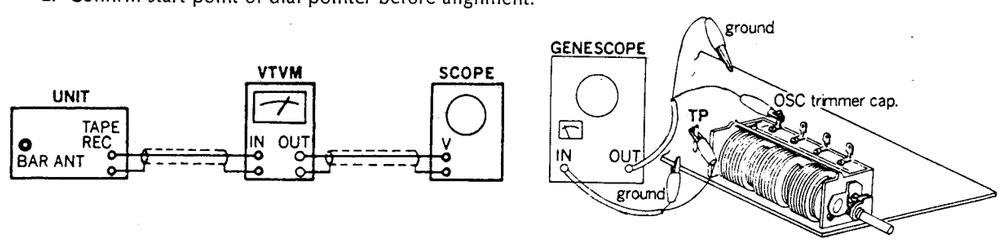
4-4. Calibration level Adjustment (See Fig. 4-6 on page 14)

Note: Two pre-settings and connecting diagram of measuring instruments is same as above 4-3. MPX Alignment.

STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1.	Calibration level Adj.	98MHz ANT Input 60dB (MONO 100%)	ANT Terminal 300Ω	REC OUT R or L-CH VTVM & Scope		Set Indication level of VTVM to 0dB	Calibration Switch.....Out
				Same as above	VR605 F-2526	Set the Indication level to −9.5dB from the above 0dB	Calibration Switch.....In

4-5. AM IF Adjustment and Tracking (See Fig. 4-7 on page 14)

Note: 1. Selector.....AM
2. Confirm start point of dial pointer before alignment.



STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1.	IF Coil	Genescope Output 55dB	L702 F-2539	TP01 F-2539	T02, T03 F-2539	Max. Output	
		Genescope Output 55dB	L702 F-2539	TP01 F-2539	CF01 F-2539	Same as above	
2.	600kHz Dial Calibration	600kHz ANT Input 60dB 400Hz (MOD 30%) AM SSG	AM ANT Terminal	REC OUT L or R-CH VTVM & Scope	T04 F-2539	Same as above	
	1400kHz Dial Calibration	1400kHz ANT Input 50dB 400Hz (MOD 30%) AM SSG	Same as above	Same as above	TC03 F-2539	Same as above	
3.	600kHz RF Adj.	600kHz ANT Input 40dB 400Hz (MOD 30%) AM SSG	Same as above	Same as above	Bar ANT L701 T01 F-2539	Same as above	
	1400kHz RF Adj.	1400kHz ANT Input 50dB 400Hz (MOD 30%) AM SSG	Same as above	Same as above	TC01 TC02 F-2539	Same as above	
4.	Signal Meter	1000kHz ANT Input 100dB	Same as above	Signal Meter	VR01 F-2539	4. 1 on Meter	

F-2559 FM MPX Noise AMP. Circuit Board

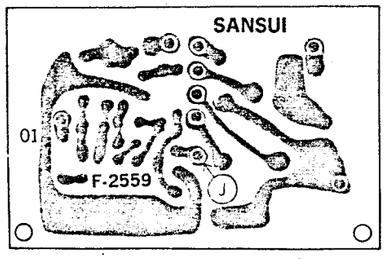


Fig. 4-2

F-2524 FM IF Circuit Board

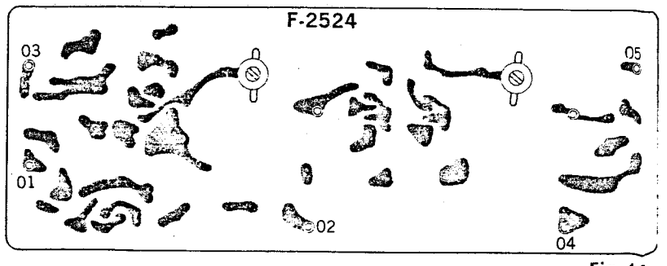
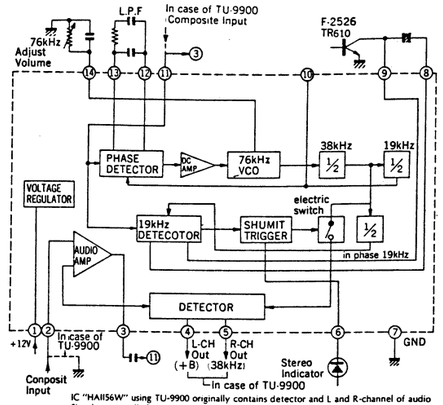


Fig. 4-3

Symptom	Cause
3. Troubles on MPX Section	
3-1. No channel separation on FM stereo broadcasting	
1) Stereo indicator lamp not lighted	1. Defective TR608, TR609 on F-2526
	2. VR603 (76kHz adjustment volume) out of adjustment
	3. Defective IC601 on PLL
	4. TR601 shorted on F-2525
	5. Defective stereo indicator LED04
2) Stereo indicator lamp lighted	6. TR603, TR604 open on F-2526
	7. T601 open on F-2526
	8. Defective D601~D604 on F-2526
3-2. MPX inoperative at FM MONO position	9. Defective TR601, TR602 on F-2526
	10. Defective TR605~TR607 on F-2526
	11. Imperfect contact of low pass filter switch
	12. Imperfect contact of selector switch, S01c, S01b
3-3. Troubles on Muting, indicator circuit	
1) Muting inoprative	13. Meter circuit inoperative
	14. Noise AMP. circuit board, F-2559 inoprat ve
	15. VR604 out of adjustment on F-2526
	16. Defective TR610~TR612 on F-2526
4. Troubles on FM Noise Canceller Circuit	1. Meter AMP. circuit inoperative
	2. Defective TR613 on F-2526
	3. Defective photo-cell lamp, PC601
5. Troubles on Calibration Level Circuit	1. Defective TR614, TR615 on F-2526
	2. VR605 out of adjustment
	3. Imperfect contact of calibration switch, S6
6. Troubles on AM Section	
6-1. AM inoperative or weak sensitivity	1. IF out of adjustment
	2. RF or tracking out of adjustment
	3. Each coil open
	4. Defective transistor on F-2539

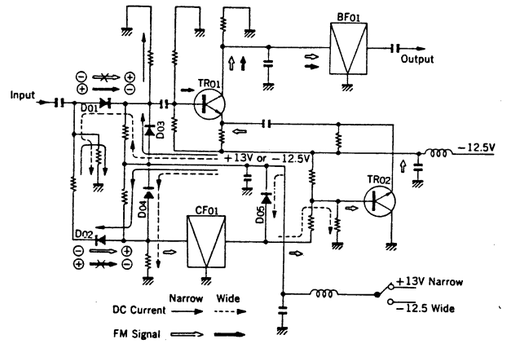
5-2. Operation Block Diagram

1) Block Diagram of PLL



IC "HAI156W" using TU-9900 originally contains detector and L and R-channel of audio Signals are supplied to output of PLL as above diagram. Actually, operation of PLL IC of TU-9900 produces 38kHz (sub-carrier) and detector is in separated other circuit in order to ensure better stereo separation.

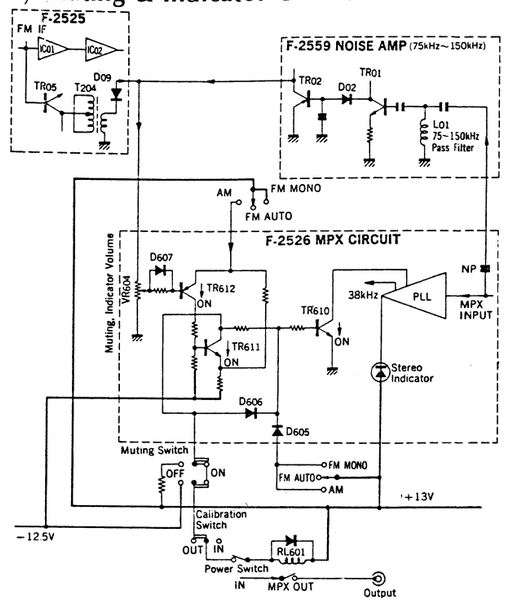
2) FM IF Band With Circuit



*Operation of Band Width Circuit

1) Band width switch.....wide
   ①−12.5V is supplied to diode switch circuit.
   ②D01 in signal circuit is ON and D02 is OFF.
   ③When D01 is ON, TR01 is ON.
2) Band width switch.....Narrow
   ①+13V is supplied to diode switch circuit.
   ②D01 in signal circuit is OFF and D02 is ON.
   ③Signal flows into narrow band filter (CF01), then TR02 is ON.
   ④As TR02, TR01 are used for differential amplifier, output signal is obtained from colletor of TR01 by switching the TR02 ON.

3) Muting & Indicator Circuit



Operation of Muting Circuit

1) Muting switch.....ON
   •When input level to TR612 is less than 12dB,
   ①TR612. OFF ②TR611. OFF ③Relay. OFF (on MPX output section) ④Output signal from output terminal is not obtained.
   •When input level to TR612 is more than 12dB,
   ①TR612. ON ②TR611. ON ③Relay. ON (on MPX output section) ④Output signal from output terminal is obtained.
2) Muting switch.....OFF or AM position
   •Relay. ON (on MPX output section)

Operation of Stereo Indicator Circuit

1) Selector.....FM AUTO
   •When input level to TR612 is less than 12dB,
   ①TR612. OFF ②TR611. ON ③TR610. ON ④Indicator dose not light up.
   •When input level to TR612 is move than 12dB,
   ①TR612. ON ②TR611. ON ③TR610. OFF ④Indicator lights up.
2) Selector.....FM MONO or AM position.
   ①TR610. ON ②Indicator does not light up.

Operation of Anti-misoperating Circuit

①Noises from 75kHz to 150kHz included in MPX composite signal are amplified by TR01.
②By switching TR01 ON, TR02 becomes ON.
③When TR02 becomes ON, V_{CE} (V1) of TR02 nearly becomes 0 volt. If signal through TR05 produces negative potential voltage (V2) by diode, D09.
The input levels (V1÷V2) to TR612 are controlled by the noise level.
④When input level to TR612 is less than 12dB indicator does not light up.

6. SCHEMATIC DIAGRAM

* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Anderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.
* Design and specifications subject to change without notice for improvement.